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"Salvation of India lies in Cottages."

—MAHATMA GANDHI

MISSING CONTENTS

THE first Convention of the Swatantra Party held in Bombay on the 1st & 2nd of August was demonstrably the country's reaction against totalitarian trends in the Congress and growing encroachment of the State on individual liberty and private enterprise. Pressed by our colleagues to make on-the-spot study and observation, we attended the Convention as a delegate from Madhya Pradesh and gathered our own impressions, which are summarised here in brief for the benefit of our readers.

Having already had one previous sad experience of joining the Praja Party of Acharya Kriplani once, which step had to be regretted by us later on, we, naturally wanted to be on our safe-guard this time not to take any hasty or immature step for which we may have to regret. Before joining the Swatantra Party, therefore, *we wanted to be satisfied with the contents and potentialities of the new party as to whether it can replace the Congress in the near future and also whether or not it can ensure rapid advance of the country in administrative and economic spheres, where the Congress rule has been an admitted failure.*

In short, the object of our study being the discovery of an alternative party to the Congress, with capacity to succeed where the Congress has failed, we regret to have to admit, that the deliberations of the first Convention of the Swatantra Party failed to inspire that high hope with which large body of delegates including ourselves attended it.

Exploitation V/s Self-Preservation

It will be rather presumptuous on our part to pass any judgement regarding the role of the Swatantra Party in the political life of the country before the party starts functioning in the States. However, from the announcements of the leaders, more particularly from the statements of the founder of the party Shri Rajgopalachari, it is pretty certain that the "Swatantra Party" is destined to play the role of a Conservative Party in the country's political life. And, it is expected to represent the moneyed, propertied and land-holding classes, big business including middle classes, who, since independence, have been victims of a variety of discriminatory legislation and unhelpful attitude of the ruling party.

The rightist elements in the country who carry the greatest influence and who have been wrongly discriminated against by the ruling party and rendered more or less political orphans had no other choice but to organise themselves into a strong opposition to save themselves from impending ruin and annihilation. It is, therefore, in the fitness of things that the birth of the Swatantra party has been hailed throughout the country as a source of relief, protection and security

against growing exploitation and tyranny of the Congress rule.

The strength of the Swatantra Party lies in the towering leadership of Shri Rajaji and unusual combination of 'Wealth and Talent' in the composition of this party which, we hope, will help develop this party into a formidable opposition to the Congress.

Lacuna

What appeared to be missing in the make up of the party is its appeal to the masses and the underlying spirit of the organisation to spread out to the masses both in rural and urban areas and to work for their betterment and advancement. Another pressing and immediate need of the country is to provide honest and efficient administration, which point too was not sufficiently stressed in the deliberations of the Convention.

'Nation-building' and 'Honest And Efficient Administration'-the twin immediate needs of the country—do not seem to have received prior-consideration of the Convention. And this created an impression on a large number of delegates and visitors that the founders of the 'Swatantra Party' have for their primary objective protection and preservation of moneyed, propertied and land-owing classes rather than building the nation and giving it honest and efficient administration, which is the crying need of the hour.

Those being the missing contents in the otherwise welcome organisation of the "Swatantra Party" many people like ourselves, who attach top-priority to the programme of constructive nation-building and efficient administration, preferred to wait and see the party in actual operation before pledging their allegiance to it. For an All-India political party like the "Swatantra Party" which aspires to replace the Congress, it is imperative that it should primarily aim at building the nation and giving efficient administration to the Country which objectives alone have universal mass appeal on which a strong opposition party could be built.

UNITARY OR FEDERAL FORM OF GOVERNMENT

By: NAUTAMLAL C. TEJPAL

IS our Nation perfectly united or not ? And what are the flaws that loosen our integrity ? These are most important questions indeed.

At present the power is distributed or limited and imposed by the Central Government to the States and from States to municipalities, local bodies or Panchayats. The power which descends from the Centre to the people, is an usurpation of rights of the people. In a really free society the power must flow from the people and not from the Centre.

Unitary Government means centralization of power at the centre. Centralization in whatever condition whether political power or industrial is the enemy of Free Individual, of self-government and of true democracy.

Centralization builds mass societies, in which the individual is manipulated, even without his knowledge; turns democracy into disguised dictatorship, between which there is constant conflict. Twelve years of our Independence has shown all the evils of the powerful Centre and Nehru's Dictatorship, though

desguised under the garb of free election and democracy. However this is not the fault of Nehru but of our Constitution.

The people of Maharashtra and Gujerat agree among themselves, to have seperate States of their own, yet despotic Central Government would not allow it. Among the Southern people there is a strong feeling of neglect and injustice, while among certain States there are disputes about border and boundaries. For these reasons certain politicians are advocating to wipe out the existance of States and have one unitary government; which means a stronger chain to bind all the people from North to South, whether they like it or not. But after Nehru no one is expected to hold such a sway on the people, to keep all of them together for very long. All will feel the despotic imposition from the strong Centre, and everyone would try to be free from it. The process has already started in the south, and the Maharashtrians and Gujeratis will follow suit due to long fustration of their strong feelings.

When liberty and democracy are mocked at, and crores of people are ruled by a strong Centre, certain parts of the vast population would struggle and fight to be free from the despotic Centre.

One religion, one culture or one root of languages are not the necessary requirements to make a united nation. If so, the whole of Europe and Buddhist parts of Asia would have been one nation having better reason to be united than the nation consisting of Punjabis, Bengalis, Maharashtrians and Tamilians.

Let us consider what are the factors that have brought our people under one Government? The reason is that we were ruled by a strong Centre for about 150 years, and we all fought unitedly shoulder to shoulder to be free from the foreign rule. The effect of the unity imposed by the British is still with us, but is wearing away very fast. Burma, Ceylon, Aden and Pakistan which were once governed from Delhi have been seperated before the British left us, the others too do not feel the glow of happiness under one rule from the powerful Centre, though independence is there.

Yet there are ways and means to strengthen our National solidarity and make an ideal free State.

Cultural nationalism is today confused with political nationalism. The Nation—state of today is almost always an artificial aggregation of regional cultures. Not the nation but the region must be the true unit of the country. Unless the village, the town, the community is autonomous, no free society could exist for long. Ultimate political power must be in the people; the people invest specific powers to their local community, the local communities delegate specific powers to a country or district federation, the districts delegate specific powers to the regional federation and so on until regional federations of the whole country finally grant specific powers such as defence, foreign affairs, currency and customs to the central federation. Thus the power rises from the people and everyone will feel the glow of liberty.

The long history of mankind has demonstrated that democracy–real participation of the people in Government—is possible only in relatively small local communities. In all larger units of Government, participation by the people becomes a form only; all such larger units must therefore be representative or republican in form. Representation calls for federation, not union of all units of government larger than the local community.

If we have such federation with the specific power of defence, foreign affairs, currency and customs vested in the federal Centre, then we can enjoy the real fruits of freedom, and it would be such an ideal State that Burma, Ceylon, Malaya, Thailand, Indonasia, Pakistan, Afganistan and many other countries of Asia and Africa would join the federation and ultimately world federation would be possible. Lately a far off land of Hawai has joined the federal States of U. S. A. More freedom there is for the smaller units more units would come forward to join the federation.

The function of the Government should be to protect the liberty of the people and to see that everyone gets justice,. But the Governments have undertaken functions for which they are inherently unsuited, such as protecting a vast variety of individuals and groups against the consequences of their own bad judgement or bad fortunes. This also necessitates far-reaching controls. This is robbing us of all initiative and self-reliance. Though it is labouring for our happiness, but it has chosen to be the sole agent and the only arbiter of that happiness, which not only spares us all the care of thinking but also burdens us all the trouble of living. The State should be the servant of its citizens, not the master of its subjects.

In Switzerland there are three different languages and cultures but true democracy functions there, composed of small units of cantons. During British rule we had small native States too, though there was the autocracy of the princes, yet they were better managed because of their smallness. However many of them were ideal States and had developed in line with the most advanced nations of the world. The group of regions which have common economic interests to develop their natural resources like rivers and canals may form a natural group among the vast federal units.

We are still the member of the British Commonwealth, only because our independence is not affected by that connection. There is custom unions among certain Western European countries and yet their freedom is not jeopardised. Many countries have joined themselves in common defence during war and even during the peace time without affecting the liberty of the individual State. So if we have only common customs, common currency, common foreign relations, common defence, common post and telegraph department and transport for all the smaller units of federation, then we shall have true liberty for the people. Larger the units of the Government—the more unmanageable they are. So more imperfect and inefficient they become, though they are democratic in form. The natural outcome would be that the economic development will rest on the initiative of the individuals, as there would be no despotic Central Government to tax heavily in the name of planning and to arrogate to itself the job of welfare.

During the British rule, even in the small native States, there was better law, order and security, and the States were managed more rationally and economically than now. If such units of States are formed and managed by the elected cantons as in Switzerland, instead of the autocratic princes, and all these units join into a federation delegating a limited power to the federal Centre then we shall have an ideal democracy.

How wasteful our economy is and how insecure our people are, could be better understood by the following instances:—

A huge dam at considerable cost has been built on the river Hiren in Forest Gir. Around this dam there is no cultivable land within the redius of hundred

miles and the terrain is so hilly that it would be impossible to dig canals. The local people advised the authorities not to build the dam there, but the dam was built and it is left without much use. This would never happen if the matter were in the hands of the people who live on the spot.

Similarly, a man swindled a woman for Rs. 10,000 with the co-operation of the police and a news reporter (really a blackmailer). The matter was reported to the police, but as the police itself was a party to the swindle, they did nothing. Then the complaint was sent to the higher authorities to Bombay, the Bombay authority sent back the complaint to the same local police officers who were themselves a party to swindling. So nothing came out of it, except more harassment from the police to the complainant.

This is not one solitary instance but there are hundreds, nay thousands, of such instances, and some of them have resulted in suicides of the harassed parties. This could never happen if the police were responsible to and servants of the local people, instead of to the far off authorities at the capital.

Our Hindu caste system is a kind of federal society for managing the affairs of caste and communities. One community never encroaches on the rights of others, it cares for its own development without injuring others, and yet different communities federate themselves for the common good, such as for maintaining or building common places of worship, Pinjarapoles, Pathshalas, Dharamshalas, etc. The vast Hinduism itself is a kind of a federation of different beliefs; each individual and sect having freedom to work and worship for his own salvation through Durga, Krishna, Rama, Shanker and any of the Gods and Godesses who are 33 crores in number. But none would think of meddling in the belief of the others. So political federation will prove a salvation for our country's ills.

CO-OPERATIVE FARMING AND FOOD PRODUCTION

By: Prof. R. G. SONY

NOWADAYS co-operation is regarded as a panacea for all the economic ills of a country. Organised co-operation for democratic planning and a basis for the organisation of economic activity has assumed great importance. Co-operative venture is regarded a half-way house between individualistic capitalism and managerial bureaucracy.

At present there is a strong move to take to co-operative joint farming in view of the resolution—passed by the All India Congress Committee at the Nagpur session. The top leaders and eminent Congress workers firmly believe that co-operative farming will promote higher production and well-being of the farmers. It is asserted now and then that co-operative farming will be adopted with persuation and willing co-operation of the cultivators but there is no doubt that some official force will be used for farming and conducting co-operative farming societies.

It will not be out of place to mention the results of this sort of farm-

ing in some foreign countries. It is acclaimed that co-operative farming, with the active support of the Government, has been successful in Soviet Russia. The fact however is that though compulsion was used to form and conduct collective farming societies, the output per acre on collective farms has been lower than in many other parts of the world where the farms are small and where they are owned and worked by the cultivators themselves.

The results of experiments in Yugoslovacia and Poland are also not encouraging. It is well known that these countries had to give up the experiments due to the failure of collective farming and peasant farming has been reintroduced.

Since we have before us the results of co-operative farming by other countries which have failed, it will be wise on our part to draw a lesson and try this experiment of co-operative joint farming only in some selected parts of the country and not everywhere. If the results are encouraging the scheme may be gradually applied to other parts and in course of time throughout the nation. If, on the other hand, the results are discouraging it will be better to retrace our steps before it is too late and continue individual farming.

The problem of food production in India is essentially of under production. An acre of land under rice in India produces only one-fourth of the yield in Italy and one-third that of Japan. This indicates the wide gap that has to be made up. In India the agricultural holding is small, the cultivator is illiterate and poor, he is not able to make use of the modern devices and implements, the irrigation facilities are not as good as in foreign countries and the lack of proper transport facilities adds to his difficulties. So instead of dissipating our energies on publicity and propaganda of co-operative joint farming let us strive to start with service co-operatives only.

Experiments in co-operative farming, so far carried out in India, are on too small a scale to provide any data for a definite conclusion. Further experiments should therefore be on a sufficiently large scale. Secondly, there is a strong need to satisfy the land hunger of the tillers who work for others without owning lands for themselves.

It is estimated that 4 crores and 30 lacs of people out of 29 crores and 48 lacs of rural population are landless. After ceiling, the surplus land proposed to be distributed to them would be too little even to touch the fringe of the problem. The only course then left is to accommodate the landless in the planned development of village industries. Thirdly, co-operative faming will prevent people from obtaining the satisfaction of land ownership and thus eliminate a source of cheap capital and a real element of happiness.

The farm is a home as well as a business and many farmers regard their lands not only as a factor of production but as something sacred to be tended for itself almost as much as for its products. Uptil now 'land to the tiller' is our slogan. So overnight changes are neither desirable nor practicable. Fourthly, unfortunately uptil now in India almost every co-operative has been far from successful with the result that the farmers feel that they stand to gain little by joining such co-operatives.

The reasons are not far to seek. Since its inception the co-operative movement in our country is identified in a very close way with the State so much so that the people increasingly feel that co-operative in our country is a State policy

rather than a voluntary movement. Since 1904 co-operation in India has remained a credit co-operation. Our co-operatives have yet to occupy a prominent position in national economy. If a real change in the people's outlook is to be achieved than the non-official element must be given a much bigger share in drawing up and carrying out schemes. The officials should play the role of a friend and an adviser. Co-operatives should be started from bottom to top. Our Prime Minister, Pandit Nehru has rightly stressed that the proper ground has to be prepared and that the people should be won over to this idea.

There is great scope for intensive farming in India. If we adopt proper methods then there is no reason why should we not be able to step up food-production and achieve self-sufficiency in foodgrains. Japan has definitely shown us the way in this direction. If we adopt the Japanese methods of cultivation then there is no doubt that even by peasant farming we can achieve the targets of agricultural production.

Taking all these facts into consideration we should think twice before we embark on any radical reform in agriculture, otherwise it would be a leap in the dark. Any radical change made in haste is bound to fail.

SOCIO-ECONOMIC SURVEY OF VILLAGE KAKRU

By: PROF. C. L. KHANNA

ABOUT six and a half years ago India launched upon a tremendous co-operative effort to bring about a silent revolution in the net-work of 5½ lakh villages littered all over the country. Only a third of the task has been done so far. Many villages are still outside the purview of the Community Development and the Rural Extension Service through which the Five-Year Plans sought to initiate a process of transformation of the social and economic life of the villages. The village 'Kakru' is one among the many which are still untouched by the "revolution". This village was selected for socio-economic survey by the Planning Forum of the D. A. V. College (Lahore), Ambala City under 'Adopt a village scheme'. It is a typical Indian village situated on the Ambala—Chandigarh Road at a distance of about 2 miles from Ambala City, the village has accessible to it the Dhulkot Railway station on the Ambala-Simla Railway line. The survey was conducted early this year on a random sampling method and covered about fifty out of a total of about a hundred house holds.

Not having been included in the National Extension Service block, it is an undeveloped village. Barring one small street of Harijans, all others wer katcha ones. The pavement in this s too, had been done with the Go aid under the Local D Schemes. The so-called H has a separate pucca drinking water to th colony. The villag built temple to w not have a fre conditions of t of the Harij desired.

Population

In the pre-partition days it was predominantly a Mohammeden village. With their migration across the borders of the Indian union into Pakistan, the evacuee houses, mostly katcha, and the cultivable 'barani' land came to be occupied by the non--Muslim refugees from west Pakistan. The aggregate population now stands at about 600 souls. It is a heterogeneous population from the occupational, social and economic stand point. Whereas Mohammedans predominated before the historic partition, the refugees now hold the sway. They comprise about half the village population. Next in importance are the Harijans and the "local" residents, numbering 228 and 72 respectively.

The population pattern of the 49 households may be analysed as follows :

	Total popula-tion	Average per family	wholly depen-dent	partly depen-dent	Earners
1. Males	202	4.1	275	13	80
2. Females	166	3.4			
3. Total	368	7.5	275	13	80

This gives the average size of a family of 7.5 members. Out of this 5.6 persons are wholly dependent, 0.3 partly dependent and 1.6 are earners. That is, slightly less than 98 (to be precise 97.4) percent of the population in the village derives its sustenance from the earnings of the remaining 2 percent. It follows that the majority of the villagers are under-...ved or uneconomically engaged.

...ratio works out to 547 males ...ales per thousand of the

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...e is a great hetero- ...ations adopted by ...n cases there are ...bourer in the ...esting season ...ctory and a vegetable vendor during other parts of the year, The investigations about the vocations therefore did not lend themselves to a statstical analysis. However, the data collected revealed that almost all the refugees were engaged in middlemens' business, shop-keeping or landlordism. The Harijans are, in majority, landless labourers while the 'local' residents are owner-cultivators or tenants. There are only two families of 'jagirdars' who are owner-cultivators.

The refugee allottees of agricultural lands are absentee landlords. They do not even reside there, but are engaged in big business undertakings or in service (either Government or private) outside the village. The allottees lease out their lands to the highest bidder among the tenants. The usual rate for lease is Rs. 60 per acre per annum, which is considered an exorbitant sum. Because of the majority of land-hungry tenants the 'batai' is 50,50. With the tenants, and even the peasant proprietors, land cultivation is a way of life. Unmoved by any aspirations of a high living standard, they live a complacent life. The cultivators are still having joint family system. Some families have 18 members, but the number of joint families is very small.

Literacy

The literacy percentage in the village is at a low ebb. It is only 14 percent and that too because of the proximity of the village to the town, which is a district headquarter and a centre of education in the Ambala Division. Inclusive of the school going children, the literacy percentage stands a little below 40. The tendency for education is, thus, perceptibly on the increase and if adequate facilities are provided it may rise much more.

The village has a Government primary school which is situated at about 2 furlongs and caters to the needs of the

children of two villages—Kakru and Sultanpur. This school marks an improvement over the single-teacher school system prevalent in the majority of the village schools in the Punjab in as much as it has two teachers for a strength of about 125 children on its rolls. The villagers expressed deep dissatisfaction at the educational facilities provided by the Government, for many parents had to send their young children to far off schools in the town or its suburbs. Many children had to go without education.

For the adults there is no Adult Education Centre nor is one desired.

As regards the age of marriage of the boys and girls, the available evidence is in favour of the conclusion that the system of early marriage was still prevalent. A few cases of child marriage also existed. The present younger generation is, however, veering round the virtue of late marriage. The consciousness or need for birth control is conspicuously absent among the majority. That explains the rather bigger families.

Village economy

1. *Agriculture*:—Like any other village, the Kakru village has predominantly an agricultural economy. More than half of its population is, directly or indirectly, dependent on land. With the exception of the absentee landlords, peasant proprietorship is the prevailing tenure. The tenant cultivators work on 'batai' system and share the produce on half and half basis with the owners. They are conscious of the unfavourable 'batai' system but the absence of an alternative occupation drives them to land for their subsistence.

The village, covering no more than 9 acres, has a cultivated area of 335 acres and uncultivable area of 86 acres. There are as many as five wells to provide drinking water but none to quench the thirst of the parched land. But for one acre of land, which is irrigated by well-water, the entire cultivated area is rain-fed. The soil is good and clayey. For want of artificial irrigation facilities, however, the productivity per acre is low and precarious. The wheat, gram, maize, sugarcane and cotton are the major crops grown in the village. Some peasants raise vegetables also on their lands. Were tube--well irrigation provided by the Government, the yield per acre can be raised three-fold. It is estimated that the yield of wheat can be augmented from 10 to 20 maunds, of gram from 40 to 100 maunds and that the income from vegetables can be raised from Rs. 500 to 1500 per acre. As the cost of construction of tube-wells is prohibitive, the possibility of individual enterprise is out of question. Extensive cultivation is therefore done. But given enough irrigational facilities, garden colonies can be set up and intensive cultivation undertaken so as to fetch lucrative income to the peasantry.

Apart from the lack of irrigational facilities, another contributory factor to low yield is the primitive teachnique of production. The farmers, no doubt, use farm seed, new types of ploughs and an admixture of chemical manure and compost manure. Generally two or three cartloads weighing about 20 to 25 maunds each of compost manure are used periodically in a bigha of land. The artificial fertilizer is used to the extent of about 20 to 30 seers per acre. Green manure is virtually unknown, impracticable as its use is in 'barani' lands.

There are no manure pits for preparing methodically compost manure. The village refuse is dumped haphazardly and sometimes just outside one's own home. Not only is the manurial value of the refuse and sullage lost, but the

unhygienic surroundings are worsened, besides adding an unsightly look to the locality. The villagers did not seem to be alive to this.

For sowing the seed, the broadcasting (chhirkao) method is usually employed. The obvious reasons for not modernising the cultivation techniques appear to be :-

(a) the lack of know-how about the modern technology and science ;

(b) the small size of holdings (average-holding of owner-cultivator is four acres);

(c) the land is taken on lease and naturally the lion's share of the produce is appropriated by the absentee landlords leaving little or no incentive for the actual tiller of the soil to work his land more efficiently and industriously ;

(d) the absence of adequate irrigational facilities ; and

(e) the peasants supplement their earning, howsoever little, by doing stray work in the town.

The net result of the low productivity is small marketable surplus. Since the village lies almost on the outskirts of Ambala City, the produce is disposed of in the market, and again purchased for meeting daily consumption needs. During the recent food crisis in the Punjab, the villagers experienced great difficulty in fulfilling their wheat requirements and they had to depend on the Government-run fair-price depots of "Atta". They sell cheap and buy dear under the duress of circumstances. This is a bad economy, indeed.

2. *Per Capita Income* :—

In the absence of proper accounts the villagers failed to furnish any reliable data regarding their income levels. Obsessed with inveterate scepticism and prejudices they refused to disclose their incomes. However, it could be known that the average annual income worked out as follows :—

Class of people		Income per Annum (in Rupees)
1. Refugees	...	2400
2. Tenants	...	1800 to 2400
3. Harijans	...	360 to 480.

3. *Family Budgets.* Whether it is a petty farmer, a businessman, or an employee no family budgets are maintained by them. The precise details of income and expenditure are, therefore, not forthcoming. Yet it is very revealing that the non-refugee peasants use liquor. In one case the expenditure on intoxicants worked out to one-third of the income. On the whole, the villagers claim to be teetotallers. Hard drinks are generally used by the labour classes and also by others on certain social functions.... marriages or 'melas'.

Smoking 'hukah' (a pipe) is a common feature. It involves a high percentage of the monthly income ranging from 4 to 9 percent.

The majority of the residents of the village consume tea as an austerity measure. Even those who have milch cattle do not consume milk as they would rather sell it to augment their paltry incomes.

Among the fats used, Dalda ghee is quite popular. The indigenous ghee is not consumed either because of its non-availability in pure form or its being more expensive.

4. *Credit Facilities* :—The village has a credit co-operative society but it serves little purpose. It has a poor membership. Many farmers are even ignorant about the very existence of the society ; there are others (mainly Harijans) who have been refused entry on caste prejudices and there are yet others who have severed all connections with it on

account of its favouritism, partiality, unjust and undemocratic working.

There is no village money-lender to finance the credit needs of the farmer. Loans of all forms (including consumption loans) if and when required, are taken from relatives or acquaintances who charge usurious (60 percent) rates of interest. Cases are not unknown where usually a well-off man draws money from the co-operative society and transmits it to the petty borrowers on a higher rate of interest appropriating the difference himself. This activity is not only anti-social but is opposed to our avowed ideal of socialist society.

Most of the peasants live on the subsistence line, with no security of tenure and have no thrifty habits. The Patwari, who is in charge of the small savings scheme in the village, has been able to attract no small savings from the peasants or others during the last year. It appeared to us that the message of small savings has not been carried to the masses and most of them are labouring under blessed ignorance. The low-income levels also account for the apathy towards the Government-sponsored small savings schemes.

5. *Living Standards* :—The heterogeneous character of the population accounts for the big gaps in the living standards and the non-assimilation of the migrant refugees with the local residents. To some extent the social and cultural inequalities between the refugees and non-refugees are responsible for this difference. There seems to be no operative force at work to bring about cohesion between the differing village communities. As a sequel to it, there is disharmony in life, thought and deed. The village does not think and work collectively as one single unit even in constructive activities. This was very much in evidence when the College Planning Forum took the initiative to construct the street pavements. The work had to be completed in the teeth of internecine quarrels amongst the villagers and the village 'panchas'.

6. *Village Panchayat* :—There is a joint panchayat of two villages, namely, Kakru and Sultanpur and hence no scheme for the benefit of the one is welcomed by the other. Moreover, the village panchayat is a weak organisation and it has failed to enforce its decisions, effectively and expeditiously. It appears to us that in the first place the practice of having one panchayat for two or more villages is administratively inadvisable and in the second place unless they are strong the "Panchayat Raj" envisaged by our National Government would end in a fiasco.

7. *Village Income* :—Startling facts were revealed to us as to the prospective sources of income of the village. The village panchayat has a "shamlat" measuring 58 acres. Out of this 10 acres are given away, with the only justified reason of favouritism, to a member of the panchayat for a lump sum amount of Rs. 325 per year. It is estimated that if the land were leased out to Harijan landless labourers the annual income could be multiplied threefold to about Rs. 1,000.

The second important source of revenue is the lease-money from the brick kiln. It is Rs. 700 per annum.

The usual 'chulah' and 'chowkidari' taxes are also charged from the villagers but they are very much resented by the proverty-ridden tax-payers. In fact they were, generally, very critical of the ever-mounting tax burden. Some even remarked pungently that high taxation was the very negation of the so-called Independence, and if they were free to exercise a choice they would preferably vote for slavery of the British days when taxes were not so oppressive.

The resentment emanated from various causes, the prominent among them being :—

(1) the apathy of the elected representative who, once in office, did not care to visit their constituencies to establish and maintain mass contacts or to fully apprise and enlighten the public about the Government policies and programmes ;

(2) the prevalent corrupt practices at all levels of administration and the perpetuation of the old beaurocratic rule;

(3) the lack of village bias and the cold-shouldered treatment meted out to the poor, ignorant and illiterate farmers as during the British rule; and

(4) the official red-tapism in the disposal of village affairs.

This crisis of confidence even in the village-folk might culminate into something dangerous and must needs be taken serious note of.

Amenities

Influenced by the impact of the civilised town-life many other civic amenities, apart from education, are in demand.

The foremost among them is the electricity. It may be noted in this connection that the Dhulkot Hydroelectric Power Grid Sub-station is situated at a distance of about two to three furlongs from the village. The Sub-station was set up about three years ago. But owing to official red-tapism and political strategy the village has not been electrified. It is believed that the economic and social uplift of the village is, by and large, bound up with its electrification. The earlier it is done the better.

There is no community radio set in this village while in some of the neighbouring ones there are. Only three homes own their battery-operated radio sets.

A dispensary, a reading room and a girls primary school are some of the other important pre-requisites to make for a happy and civilised life in the village.

Conclusion

The people have no plan consciousness. They live a tradition-ridden life, unmindful of the new responsibilities which the political freedom has devolved upon them. But the fruit of freedom has not reached these villagers. Self-centred as they are, the community welfare is alien to them as of old. For rousing in them a sense of citizenship, fellow-feeling and patriotism, continuous efforts are needed.

A good nucleus is afforded by the village leadership itself. A 'jagirdar'. Sardar Hardial Singh can show the light. He has a small poultry farm which has bright prospects to grow and develop. He is known to be making serious efforts to organise a co-operative joint farming society in the village. If it materialises it is bound to usher in a new era in the economic history of the village. The farmers, if given a strong and well-organised panchayat, enough tube-wells to provide irrigation facilities and a few agro-industries, will be able to bring about a complete metamorphosis of the village economic structure.

ROLE OF SERVICE CO-OPERATIVES IN VILLAGE ECONOMY

By : RAM MEHAR SINGH

INDIA is grappling with acute food problem today. To feed its teeming millions, it has to spend several crores of rupees on import of food grains. It is because our average yields are pathetically low and for which uneconomic and fragmented holdings appear to be greatly responsible. Secondly the cultivator is not well equipped with the modern methods and techniques of agriculture. His means are extremely limited.

It is agreed on all hands that we cannot be successful in stepping up food production until we can arrange to supply the wherewithals of crop production at cheaper rates and at the proper time, besides giving free technical advice. The cultivator with his limited means cannot afford individually to take advantage of and derive the full benefit from the modern methods and techniques of agriculture. Naturally he needs assistance of some such source which can obviate his difficulties.

The village primary credit societies, Sahkari Sanghs and seed stores where they exist, have been helping the cultivator through credit, seeds, manures and fertilizers etc. These societies have on an average been supplying about 3% of the total credit requirements of the cultivators. This is negligible and cannot solve the complicated problem. with which our cultivator is confronted.

The 64th session of Congress held at Nagpur this year decided to spread a net work of service Co-operatives throughout the country so that they may prove instrumental in stimulating food production to a substantial degree. The idea of service Co-operatives mooted out at Nagpur Session is by no means new. It is already popular in countries abroad like China and Japan where they have already made headway. The existing primary societies and Sahakari Sanghs can be regarded as a sort of service Co-operatives. But the service Co-operatives as visualised by our Prime Minister, who is so fervently advocating and rightly so their establishment will be different from our existing institutions referred to above in as much as they will have wider scope and varied functions to perform. These societies besides arranging for seeds, manures, implements will also arrange for the storage, marketing and processing of their produce. They will also arrange such articles which are needed in day-to-day life of the village community and which cannot be cheaply arranged by the villagers individually.

The idea behind the establishment of service Co-operatives is to enable each cultivator in a village to reap the fullest advantage of the modern methods and techniques of agriculture now obtaining. The cultivator with the limited resources at his command can never imagine of making use of modern implements, of arranging improved seeds and efficacious manures and fertilizers. He cannot guard his crops against the ravages of diseases and pests. Construction of persian wheel or installation of a tubewell is out of his means. Obviously service Co-operatives are the only resort for the cultivators to fall back upon. In service Co-operatives lies their salvation.

Having considered the above, the question naturally crops up as to what will be the fate of the existing Co-operative

credit societies and what should be the appropriate area of operation of a service Cooperative. The area should neither be too big nor too small. Since the service Co-operative will have multifarious activities and as experience also corroborates, there should be one service Co-operative for every gaon Sabha consisting of about one thousand persons. In exceptional cases, there may have to be organised more than one service Co-operative in one gaon Sabha, where it is not practicable for a single Co-operative to cater to the needs of the whole gaon Sabha or there may be one service Co-operative in more than one gaon Sabha where it is considered uneconomic to have one service co-operative for one gaon sabha only and where the location of the place so warrants it.

The existing primary credit societies will have to give place to service Co-operatives. They are to be converted into service Co-operatives and that is the best solution.

The membership of these societies should be open to the whole village community irrespective of the occupation one is carrying. These societies should serve the village community in all walks of life.

The service co-operatives may either be agricultural or non-agricultural according as they would render agricultural service or non-agricultural service. There may be industrial service co-operatives, agricultural service co-operatives for artisans and agriculturists respectively. There may be producers' service co-operative, consumer's service co-operatives or marketing and processing service co-operatives. The above classification shows that these co-operatives will have varied functions. Further one type of service co-operative seems complimentary to the other. The cultivator needs crop loans, he needs loans for purchase of bullocks etc. He may need loan for social ceremonies such as daughter's marriage or education of the children. For this he would need the help of the credit society. Similarly he may need the help of the marketing society for disposing off his surplus produce at fair price.

Whatever may be the nomenclature designated to such a co-operative society, it must necessarily aim at reducing cost of production of various crops grown by the cultivator. It should regard elimination of waste as its primary duty, besides rendering cheap and timely service.

A perusal of the above would reveal that a service co-operative has to be multi-purpose in its functions if it has to become popular with the cultivators. The service co-opertive contemplated herein may be required to perform the following functions:—

(1) To advance loans

(a) Short term loans for raising crops, social ceremonies, etc. Non-agriculturists may be advanced loans for cottage industries

(b) Medium term loans for purchase of bullocks, construction of masonry well, and reclamation of land

(c) Long term loans for improvements of a permanent nature such as installation of tube well, purchase of machines etc.

(2) To supply the following agricultural commodities at fair price:—

(a) Manures and fertilizers

(b) Improved seeds of crop plants and vegetables

(c) Improved implements and tools on cash and hire

(d) Insecticides

(3) To arrange for storage, marketing and processing of surplus agricultural produce and articles of cottage industry

(4) To arrange raw materials for cottage industries

(5) To provide gainful employment to its members

(6) To cater for the sanitary needs of the villagers

(7) To extend facilities of schooling and dispensary

(8) To arrange for repair of implements and tools of the members

(9) To supply consumer goods to the village community

(10) To give technical guidance in agriculture and allied subjects.

In short the service co-operatives should take charge of all economic activities of the village community. Each village or at least a goan sabha should have a service co-operative, if we want to root out poverty and hunger, disease and pestilence from Rural India.

If we persuade the peasants and artisans to adopt co-operative method of production their production would decidedly increase, gains will accumulate. They will be able to have a better life, happier village and a prosperous country.

If we believe in co-operatives as we must, then we must try to see that all our activities in all fields tend to be more co-operative. If this much is done, then and then alone we may expect an economic revolution in the country. By that alone the country may be self-sufficient which is the crying need of the day.

CROP—LOANS

By: H. M. DESAI

IN the agricultural production, one of the most important factors that controls crop yields, is the availability of the agricultural finance as and when required and in sufficient amounts.

Royal Commission on Agriculture (1925) examined this question and suggested the growth of co-operative movement on sound lines so that the villagers can help themselves by mutual help.

Government passed ameliorative measures like the Bombay agriculturist Debtors' Act (of 1939) and Bombay money landers' act (of 1947) but these failed to give the required relief to farmers but on the contrary dried up the source of available finance in a village.

In view of progressive government policy to help the agriculturist, this question was considered exhaustively by various government and public bodies with the result that, the creation of institutional agencies to provide finance to credit-worthy farmers was thought of.

The agricultural sub-committee of the policy-committee recommended the provision of the agricultural credit to the cultivator for raising of crops on more systematic basis.

The Co-operative Planning Committee (1945) suggested as a matter of policy to utilise the services of the Provincial Co-operative Banks and other similar co-operative financial organisations to provide agriculturists with all the facilities required by them. The government should provide necessary aid for this purpose to Co-operative Banks and financial Institutions.

The Bombay Government, which had recognised the importance of the Co-operative agency for executing its programme of Rural reconstruction, referred this question to the Bombay Co-operative Bankers' Association in order to ascertain its opinion in this regard. The Co-operative Bankers' Association after fully considering this question recommended to Government :—

(1) to utilise the existing Co-operative Bank by providing it with necessary assistance and (2) to appoint a committee to work out details regarding the provision of government assistance and to recommend necessary changes in the constitution of the Bank.

The Government accepted views expressed above and appointed a committee to give effect to the above mentioned resolutions.

N. B. For detailed information the report of Crop Loan Evaluation Committee of the Bombay State Co-operative Bank Ltd., may be consulted.

New System

The Information on the various important items are given below :—

(1) The new system is based on actual production of each crop and its acreages. Loans for specific purpose and return of loan on harvesting of the respective crops are the important factors of this system. Quantum of finance was dependent on actual acreages of different crops cultivated by a farmer and his credit worthiness depended on it.

(2) Credit-worthiness of a farmer depended on the extent of area he cultivated and on his cropping scheme. Production was the criterion for credit-worthiness and not his assets.

For intermediate loans, security is linked with real assets.

(3) In the scope of the seasonal finance, cultivation charges-harvesting charges – labour charges – maintenance of bullocks-current expenses on running of agricultural machinery and the maintenance of farmer's family are included.

Note :—This is a healthy change from the traditional one, in which, a farmer and his needs are fully looked into, so that he may not have to go to other agency for finance.

Eligibility for Loans

The amount of loan depends upon the actual crop acreages of different crops. The scale of finance per acre will be determined by the financing agency in consultation with the representatives of the societies.

Procedure Suggested by the Committee

(1) A prescribed form should be filled in by each of the members of the Society and submitted to the Secretary.

These forms will be scrutinised by the Secretary and will be placed before the managing committee for sanction.

The Committee after examining each case will sanction the loan applications. These applications will be submitted to the branch committee of the Central Financing Agency who with the bank official will further scrutinise these applications and will sanction those of A and B class societies and will pass them on to the central financing Agency for confirmation. Those of C and D class societies will be forwarded to the central Financing Agency for sanction.

The Central financing agency will sanction credit loans of the society after due scrutiny, if necessary, by the field staff.

Time taken in case of applications of A and B Societies will be about a month and those of C and D Societies about two months.

Note:—In actual practice the district unit has made some changes in the procedure to suit its conditions.

(2) It is suggested that crop loans should, as far as practicable, be given in material and, cash credit should be limited to a minimum amount. Cash loans should be given in instalments. It is further suggested that in the scope of a crop loan processing expenditure may not be included. This should be the function of the marketing society.

Essential supplies of his production requirements to the cultivator and sale of his produce should form the essential parts of the crop loan system.

(3) To watch over the proper utilisation of the loans should be the responsibility of the Secretary and the members of the society. The bank supervisors and field staff should assist the society in this function. It is very essential that the Secretary of these societies should be a well trained and a capable man.

(4) Timely finance and adequate supervision in an ordinary year will ensure regular recovery. In any case due care and prompt action is necessary in this regard.

In case of non-recovery in genuine cases, relief is recommended and in other cases suitable actions are suggested.

(5) For scarcity years, appropriate provision is suggested to be made by suitable financial procedure. Arrears may be spread over to two or three years. Members may be encouraged to make deposits during good years, so that, they may have less need to borrow after bad ones.

Remarks :—

(1) Weakest links in our present day rural organisations are farmer himself-rigid social organisation-inefficient and corrupt leadership-weak supervision-inefficient control-weak marketing organisations and indifferent seasons.

(2) In any system of finance, honesty and integrity of the human factor is the most important. As is usual with our Planning procedure, all the welfare schemes are formed at the top and attempts are made afterwards to fit them on the actual soil on a general scale. If the procedure is reversed it will even cut many of the troubles, some ups and downs, on which a scheme actually breaks or becomes inoperative. Lot of time in the initial stage should be spent in actual field study in order to fit a scheme to the actual enviroment of the area. There should be a strong educative propaganda to prepare people to receive the scheme and give it an honest trial.

(3) In the working of the scheme there should be no compromise with the essentials of the scheme. Success should be judged by quality and not by quantity considerations. From our experience of all these years of the co-operative work a lot of rich experience is gathered which should be fully utilised in furtherance of the co-operative movement.

Suggestions :—

(1) with these points in view it is suggested that our State should be devided into its various agricultural zones. The development activities of the rural areas should be zone-wise. Each zone should be surveyed socially and economically which should serve as a basis for the welfare, research, education and the development activities of this area. Accordingly, the co-operative development should be undertaken tract-wise with co-operative societies for the individual village or group of villages supported by a marketing society and a bank for a suitable unit of the tract or for the whole of the tract as may be found convenient.

(2) In a Society's area whether it may be a village or group of villages, the agricultural population should be members of that Society. Whether a

Society should be single purpose or multi-purpose should depend upon the local conditions.

A group of single purpose or group purpose Societies should have a marketing Society for serving the interest of the member Societies.

(3) For the present most of the marketing Societies are only cess collecting centres serving no useful purpose. Really viable and effective marketing societies are exceptions.

It is not suggested that a marketing Society from its very inception should be an efficient organisation. If it is, it is most desirable. Under our present developement, it may take time for co-operation to be effective in its working. What is emphasised here is that from the beginning the outlook must be progressive so that there may be hope of its gathering strength as it progresses.

(4) For the seasonal finance scheme to succeed the marketing organisation should be strong and effective. There should be standard and grades for each of the commodity dealt with by a marketing organisation.

Except for a cotton crop there are no well defined standards and grades for any other agricultural commodity. This should be the normal duty of the marketing section of the co-operative department which should be strengthened by research organisations. Marketing without standards and grades will not be helpful to members in securing better services in sales of their crops.

(5) It is suggested that for the effective working of the seasonal credit system each society should be thoroughly studied and an individual card of each of its members should be prepared indicating his needs and income. This will facilitate the preparation of credit statements and their periodical supervision. This card will represent a budget statement of each of the farmer's family for estimating his financial requirements, instalments in which this will be required with forecast of receipts. The central institution should give sufficient field staff for supervising these societies and helping the branches of the Central Bank.

(6) Under our present day social development for a new scheme to succeed, great care will be necessary to carefully watch (1) Over finance (2) Unauthorised spending of funds of loans granted to the members and (3) Timely recovery of loans. There should be statutory obligation on auditing and supervising staff to periodical checking and reporting to the higher-authorities any lapse in this respect. It is suggested that the services of the agricultural department should be fully utilised in the execution of this scheme. In fact, it should be the combined responsibility of both co-operative and the agricultural Department to successfully run this scheme.

(7) In the seasonal finance scheme the other important factor which is uncontrollable and cannot be predicted is the occurance of the scarcity conditions. In the scheme, provision should be made to give relief to members by postponing the recovery to subsequent years.

How this uncertainty of season will react on the scheme is not predictable. From the past experience it can be said that scarcity occurs frequently and in many cases in succession. If this happens in a cycle of years and if repayment is insisted on, the farmer will be hard pressed. Provision for automatic lapse of a part of the debt may be thought of and provided for.

What form it should take requires to be thoroughly looked into. It may be that

such a contingency may not be of general nature but a good few farmers will be hard hit periodically by such a calamity and may need protection. In good years farmers should be encouraged to deposit a portion of their sale produce (i. e. about 5%) as a security against lean years.

8. For co-operation to succeed, the people should be co-operative minded which means that the group interest should prevail in place of an individual interest and the leadership should be sincere and honest. For the present the co-operative movement is under complete control of the ruling party. It acts as a cushion to political activities of the ruling party over which there is no effective control of the enlightened public opinion which is almost absent under present conditions.

As a policy, Co-operative Movement should be divorced from politics in the larger interest of the co-operative movement.

There should be an independent organisation like the "Servants of India Society" for selfless and effective service in the rural areas. Such organisations should be sponsored by the leaders of the co-operative movement which should receive full encouragement and support from the Government and the public alike.

ROLE OF LAND MORTGAGE BANKS IN RURAL AREAS

By : Prof. K. BAHADUR

AGRICULTURISTS in general require three kinds of credit–firstly, short term credit for conducting agricultural operations, secondly, intermediate credit of about 2 to 5 years for the purpose of sinking wells, purchasing cattle and agricultural implements etc. and lastly, long term credit extending to 10 to 20 years for the discharge of prior debts, for effecting permanent improvements to the land, for the reclamation of uncultivated lands etc. The first two types of credit are supplied by the Co-operative Credit Societies and the last one by Land Mortgage Banks. The Land Mortgage Banks in India, it is said, are similar to the Farmar Loan Banks in the U. S. A., so far as their workings to provide long term credits to the farmers are concerned.

Before the L. M. Bs. the Primary Co-operative Credit Societies were the only source of small credit and they also rendered much services but they could not achieve appreciable progress as they should because of their inadequacy for rendering financial assistance to the cultivators for long-run purposes. In the absence of long term credit the cultivators used to fall victim to the money lenders, which resulted in intensified quantum of rural indebtedness in the past. The rate of interest realised by the mony lenders was up to the limit of twenty to seventy five percent as the evidence shows. Even after Zamindari abolition resources of getting loans have become all the more scarce. Hence the importance of L. M. Bs., for long run financial assistance

is much stressed with a view to mitigate the dependence of cultivators on the money lenders and also to raise the economic status of the cultivators by facilitating the process of redemption of traditional debts.

Thus keeping the term L.M.B, within the orbit of definition "it is called an institution, which offers long term loans on the security of the land, mortgaged with it." Such a Bank is of three kinds–Fristly, Co-operative Land Mortgage Banks, which accumulate capital often on sale of mortgage bonds and sometimes by loan as well with the motto to minimise the rate of interest on long run and to extend facilities to the members. Germany and America own such banks in the form of Federal Farm Loans Banks. Secondly, Joint Stock Land Mortgage Banks, which like Commercial Banks, possess the quality of limited liability and function purely with commercial motive. As such the Govt. exercise full control over them to see that they do not exploit the debtors by realising exorbitant rate of interest. They also own capital by sale of shares, bonds and mortgage bonds. Such banks are found only in European countries. And lastly, there is Quasi-Co-operative Land Mortgage Banks, which can be said as the combination of the above two, having the quality of limited liability. Majority of the members of this type of banks are debtors and the rest are business persons. Such type of banks are found in India alone.

Any way the Land Mortgage Banks can be organised on any one of the levels stated as above. But the Co-operative type is an ideal one.

Its significance

The real beginning of such Banks dates back to 1929 when a Central Land Mortgage Bank was set up in Madras with a view to centralise the issue of debentures and to co-ordinate the working of primary banks in the Province. Gradually Bombay, Mysore, C. P. and Berar also took the lead after 1935 so far as their numerical strength was concerned. In Madras the bank was all the more successful in its execution due to close supervision exercised by the Govt. and the cautious policies together with efficient policies followed by the Central Land Mortgage Banks themselves.

With the outbreak of the great depression agricultural assistance was badly needed due to fall in agricultutal prices and values. This initiated some tempo in the working of land mortgage banks. But the reverse situation just happened during the last 11 or 12 years when the agriculturists have experienced a measure of prosperity along with the opportunity of advance payment of debts. Further the steps taken by the Govt. with regard to the scaling down of the old debts and rendering facilities for easy instalments of payments have all mitigated the necessity of borrowing. Thus the banks which were primarily confined to discharge the function of debt redemption lost their bright future. Hence the need to broaden their activities connected with the financing of agricultural schemes, like improvement of land, provision of irrigation, fencing, drainage facilities, purchase of farms and agricultural equipments etc. was realised. With the dislocation of the old credit supplying institutions on the one hand and the increased emphasis on increasing the productivity of land on a long period basis in the recent years on the other hand the need of L. M. Bs. has been more urgently felt. With the proper organisation of the L. M. Bs., it is sure, people's saving can be collected and made available for improvement in land to a

much greater extent than has so far been done.

Working and Achievement

However from the working of the L.M. Bs. in our Country we are confident to conclude that the loans advanced and work done by the banks are not equal to the task but below what is required. Till 1953–54, loans advanced by the Central L. M. Bs. and Primery L. M. Bs. up to the tune of. Rs. 1.92 Crs. and Rs. 1.40 crs. respectively were small if not negligible in comparison to the need of the cultivators for long-term credit. The capital of these banks is raised from debentures, deposits and loans from the Government. In 1948 the Reserve Bank of India agreed to help the Central L. M–Bs. up to 10 Pc. of the debentures issued by the L.M.Bs which was further raised up to 20 Pc. in 1950. Under the first Plan again the Government out of Rs. 5 crs. allotted for long term agricultural credit set apart Rs. 1 cr. for the purchase of debentures etc. "It was decided that the Central Government and the Reserve Bank between them would purchase debentures of Land Mortgage Banks to the extent of 40 pc. of the issue or the short fall in public subscription, which ever was less, on condition that the central land mortgage banks taking advantage of this offer agreed to dispense loans for productive purposes upto an amount not less than the half of the joint subscription by the Government and the Reserve Bank within one year".

So for the primary land mortgage banks are concerned their working capitals depend upon the borrowing from the central land Mortgage banks and money raised from the market through the debentures. But it is essential for a long stability in their working that they should increase their share capital and reserves as the co-operative Banks do.

It is ungratifying to note that the L. M. Bs, like the co-operative banks have been found charging the rate of interest high even up to 6 pc. and 9⅜ pc. as observed in 1953–54. This is one of the grave leakages of the L. M. Bs. in their workings which, if they aim to be really useful to the cultivators, require early attention for its close. And then alone these banks shall be able to raise loans at the cheapest rates to improve their operational efficiency. But for this step, to be fruitful the cost of management of these banks will have to reduced to enable them to reduce the rate of interest and to make them yield adequate return on the money invested. Frequent complaint against L. M. Bs is the delay in connection with loan application which has become a by–word. Moreover "the system lacks speed in assessing the value of the immovable security offered, examining the title to the land and determining the instalments in terms of repaying capacity".

Taking the above drawbacks of the banks into consideration, the 23rd Conference of co-operative L. M. Bs. in the year 1953 held in Madras made numbers of suggestions. It was brought to light that high rate of interest realised by the banks was not the only flaw in their workings but there were so many which caused bottleneck in their future development. They were inadequacy of funds at the disposal of banks, delay in sanctioning the loans, slow and tardy tendency of the borrowers for the redemption of debts due to deteriorating condition of agriculture, defeat of the purpose of loans by using them in discharging prior debts than to imporve the land etc. Hence the Conference laid stress on the utilisation of the available funds in increasing agricultural production and reducing the cost of production by improving the organisational efficiency of agricultural

operations. On this basis alone it was recognised by the Gadgil committee that on the whole the L. M. Bs had a very slow development in India and so made negligible contribution to the provision of long term credit in the country although such banks have proved very successful in Germany and elswhere. In 1945-46 there were L. M. Bs. in only 9 out of 15 Provinces. In 1950 the Provincial distribution of the existence of such banks were as follows :—

Madras	—126	Pr. L. M. Bs.	
Bombay	—19	,,	,,
U. P.	— 6	,,	,,
Assam	— 2	,,	,,
W. Bengal	— 2	,,	,,
Ajmer	—12	,,	,,

In 1951 there were 286 Provincial Land Mortgage banks and 6 Central L. M. Bs but in 1956 the number increased to 302 and 9 respectively whose working capitals were Rs. 18.52 crs. and Rs. 11.34 crs. respectively and total loans advanced by these banks were Rs. 1.73 crs. in that year. The Primary Land Mortgage Banks are well developed only in Andhra, Madras, Bombay, Mysore and M. P.

Suggetions or way to success

In order to make these banks effective in solving the difficulties of the cultivators or enable them to meet the country's long term credit needs it is primarily necessary that each State should have a central L. M. B., and number of primary L. M. Bs. Without a proper network of Central and Primary Land Mortgage Banks rapid progresses can hardly be envisaged. The movement should be uniformly developed in all parts of the Country. Financial aid should be rendered especially by the Government, which should be free from stamp tax and Registration fee, enabling the banks to give loans for permanent improvements in agriculture.

Reserve fund of the bank should be increased for economic solidarity and long run deposits. Period of loans which is up to 20 years in India and between 30 to 75 years in foreign countries, maximum being in France, should be extended and the rate of interest on loan should be based on the period of the debt as well as the economic conditions of the debtors. Further the financial aids made available by the Government through G. M. F. or other agencies should be given through these banks. This alone will bring more recognition and initiative to the banks.

Laws relating to the right of sale of the land also need revision and alteration so that the banks may get the right to sell the lands direct without seeking help of the court. Reserve Bank of India has indeed rendered much help to the L.M.Bs. Above all "full co-operation for advice and consultation should be available to the L.M.Bs. from the other Government departments to encourage improvements and the banks should be co-ordinated with other co-operative institutions, in order to maintain contact with their borrowers.

Any Land Reform would be meaningless if these banks are not initiated on large scale to augment agricultural development which constitute the base for industrial progress. Now the Life Insurance Companies after nationalisation should take lead in helping the Central L. M.Bs. In a way "their real success depends to a considerable extent on accurate assessment of the value of the land offered as security and the annual repaying capacity, adjustment of loans and the recovery of the instalments punctually". But the existence of the land Alienation Act, as some are of opinion, has defeated the main objective of such banks. Added to this is the

default of the Directors and honorary workers who are themselves large borrowers.

But all these can be best controlled and managed if Govt. lends vigilant eye to them.

MIXED FARMING ALONE CAN MAKE SMALL-SCALE FARMING PAY

By: Dr. T. M. PAUL

MIGRATION of the rural population into urban areas in search of employment, started during the war-years, is still continuing and is likely to continue as long as small-scale farming does neither pay nor provide full employment throughout the year. The economic aspects of this problem are causing considerable upheavals in the rural areas, as hired labour is not available in many places for agricultural operations, which are mainly seasonal in nature. Fragmentation of holdings as well as a variety of other reasons, do not permit machanisation of farming in this country. So, if agricultural labour is allowed to migrate like this into urban areas, we will very soon reach a stage when fields will lie uncultivated.

The same migration question is also creating socio-economic problems like housing shortages, slum areas etc., in urban areas. By taxing the middle and upper classes the urban corporations may be able to remove the existing slums and give the minimum living conditions for the poor in the cities, but this over-crowding tells upon the health and well-being of the rich as well as the poor in the urban areas. A real and permanent solution to the problem will be to make small-scale farming more paying by encouraging mixed farming.

Mixed farming, besides removing the monotony of the present day rural- agricultural life, will also provide full employment throughout the year. It will therefore, be useful to discuss how mixed-farming can make small-scale farming pay and also provide a more interesting and varied life in the rural areas.

It is unnecessary to emphasise the interdependence of man, animal, plant and soil. But this fact is very seldom recognised in our agricultural economy. Besides bearing the burden of ploughing our fields and carting about agricultural and other produce, the animals provided the manure, meat and milk needed to nourish the soil and the man respectively. In spite of this, we as a nation, do not look after our animals properly, nor feed them properly. No wonder, if our health and the fertility of our soil deteriorate day by day.

Giving animal husbandry an important place in our agricultural-economy or in other words, introduction of mixed farming alone, can set right these things. The exact extent to which animal-husbandry can be introduced into the agricultural economy of each area, depends upon the local conditions. But considering the present state of affairs, one finds ample scope in all parts of the country for the introduction of animal husbandry as an important wing of agriculture, both for improving the income

of the agriculturist by full employment, as well as for improving the health of the population and the fertility of the soil.

When one thinks of animal husbandry as an important wing of agriculture, dairying strikes one's mind first, more so, in a county like India, where motive power for all agricultural operations is provided by the bullocks. setting apart a part of the land for fodder cultivation and feeding the animals and breeding them up, will provide good bullocks and plenty of milk, besides the valuable manure which enriches the soil. No additional labour is required in a rural family to look after a few animals and this will provide employment. At the same time, the income derived from dairy produce, will go a long way to augment the income of the agriculturist. Consumption of part of the dairy-produce will improve the health and well being of the rural-agricultural population. Depending upon local conditions are more favourable for goat and sheep breeding, these can be introduced into the agricultural economy with almost the same benefit as cow or buffalo keeping.

Another line of Animal Husbandry which can be introduced into the rural agricultural economy is poultry-keeping. This has the advantage of being not quite a new thing in the villages. Every homestead has a few fowls but only the quality of the birds has to be improved by grading them up by breeding, and the performance improved by better management and feeding. Here also, the eggs and poultry meat go to enrich the rural diet, and improve the income, both by the sale of the produce as well as by the improvement of the fertility of the soil leading to increased agricultural output. Again, depending upon the local conditions, ducks, geese, turkeys and pigeons can be introduced with advantages.

Yet another line of animal husbandry easily introduced in rural areas is piggeries. Pig is perhaps the hardiest and most economical to rear for conversion of vegetable food into susceptible to diseases and being fast multiplying and fast growing, is of great economic significance to the agriculturist if there is a market for the disposal of pork. Here also, the labour involved in looking after the pigs will be provided by the people of the house-hold, providing them useful employment throughout the year, and increasing the family income.

Any agricultural land will permit the introduction of bee-keeping with advantage both to the agriculturist and to the crops. Both the investment and attention needed in this case, are very small. This will provide an amusing, and at the same time a paying hobby for the women and children of the house-hold.. Besides the honey will make rural diet sweeter even without any land and can keep a few lives with advantage.

Small fish have reached the drawing rooms, as a hobby for people who can afford to spend some mony without any hope of returns. These are kept in glass troughs just for amuse, natural or even artificial ponds have a definite place in mixed farming, particularly in areas where there is no dearth of fater e. g. paddy growing tracts. Fingerlings are supplied free or at a nominal cost by the State animal husbandry departments and expert advice is always available free. Fish can thrive on the natural vegetation available in the ponds. So even without spending anything, one can get 1+2 catches of fish a year. Besides the income the fish might bring in, fish is a nourishing food which will enhance the natritive value of the diet.

All the above mentioned lines of animal husbandry will work most

economically in the hands of a small-scale agriculturist. If done on a large scale, the question of labour-charges, and mis-management come in. If done in urban areas, the cost of purchasing all the feeds, put up the maintenance cost and reduces the margin of profit.

On the contrary, if these are introduced and integrated into the rural agricultural economy, it works to more than one advantage. Feed cost of the birds and animals is practically negligible and hence the margin of profit is much greater. At the same time, the fertility of the soil is increased or atleast maintained without having to spend money on chemical fertilizers. Another advantage which cannot be accurately assessed in terms of money is the provision of interesting and at the same time paying hobbies for the agriculturist himself during his off-seasons and his wife and children all the year round.

Quite apart from the question of providing full employment, introduction of animal husbandry into rural agriculture, indirectly improves the nutritional level of the rural population. Consumption of more of milk, eggs, meat and fish from the animal husbandry activities, will make the diet of the rural-agricultural folk, well balanced, varied and more appetising. So, both from the points of improving the economic status and improving the nutritional level of the population in general, it is very essential that animal husbandry should be made to play an important role in the rural agricultural-economy.

The solution of many of the socio-economic problems of the rural India depends upon making small-scale farming pay by the introduction of mixed farming.

PISCI-CULTURE AND FERTILIZATION

By: A. K. B. CAZI

Importance of Fish in Human Dietary

FISH is recognised as high ranking protective food. It constitutes the richest of fat soluble vitamins A & D; so rich, in fact, that commercial source of these vitamins for therapeutic purposes are the extracts from the livers of fish. It has been discovered recently that fish is also a rich source of B complex vitamins including the most needed and most rare B 12 which is also known as Animal Portein Ractor shortly referred to as A. P. F., the inclusion of which even in minute quantities in the diet increases the efficiency in the utilisation of inferior type of proteins which otherwise would not fully be utilised by the animal body to any great extent.

Pisciculture, therefore, which aims at growing fish under controlled conditions is a matter requiring due consideration from the point of view of improving the dietary of fish eating population. One of the main factors in pisciculture is artificial fertilization of waters in which fish live. Fertilization enables the individual fish to grow as rapidly as to attain the size 4 to 5 time bigger than otherwise.

Pisciculture and its scope

Perrenial tanks, ponds and wells with care and attention and application of right method are capable of providing an unfailing supply of good edible fish.

There is more or less as much difference of cultivated and uncultivated fish as there is between cultivated plants and their wild spacies.

In many parts of Advanced countries fish culture in ponds and tanks is a part of agricultural practice, encouraged and even subsidised by Government. In India too Government have started taking keen interest in pisciculture. Fry or young fish of fingerling size of suitable varieties that grow quickly are planted in carefully selected and prepared tank. In Punjab the Fry are supplied free of charge by the Department of Agriculture.

Irrigated and flooded fields can be used for growing fish. Introduced into the paddy fields flooded with water they are found to grow to a remarkable size by the time the crop is ready for harvest in four months on account of warmth and richness of plantonic life.

Introducing fish in paddy fields is practised in parts of Kolaba district in Bombay State. The growth in the shallow waters as found in paddy fields is rapid, and within a few months they attain a size of a foot to 18 inches which normally would require two years to attain in an average perrenial tank. The paddy crop and fish live in a symbiotic association and often the latter benefit the paddy crop in destroying the insect pests. Fry abound most in irrigated or flooded locations, and in monsoon, every streamlet and piece of water is resorted to by them in search of food. In the embanked paddy fields the Fry attain an entrance along with water which is at right depth to suit their punny size.

What is being practised in the paddy fields of Kolaba district can also be done elsewhere where paddy is grown under impounded water and at no extra expenditure. Such paddy fields may be made to yield a double crop of paddy and fish simultaneously. Jute fields in Bengal too can be made to yield a double crop likewise, since the crop remains standing in water until it is harvested. Paddy and Jute growers would gain additional income from this double cropping. In fact, the crop itself stands to gain by the association of insect devouring fish which also keep down the menace of Malaria and other mosquito borne diseases. Fertilisation achieves one more good thing viz. it keeps under-water weeds under control by cutting out the Sun's light reaching them because of the overhanging growth of plankton.

Sir F. A. Nicholson states "In India an acre of average water will, with proper care, produce as great a weight of food as an acre of average land, while its money value will be much greater. The utilization of pond by pisciculture not only costs less than arable cultures, but far less liable to seasonal uncertainties, while the water is still available for other purposes and is even improved by fish growth. The stocking should necessarily be accompanied by a carefully planned fishing programme so as to spread the supplies over the whole year round".

Use of Commercial Fertilizer and its advantage in fish farming

All fish are dependent either directly or indirectly on plankton for food. Plankton consists of organisms that float more or less passively in the water, such as jelly fishes, diatoms, eggs and larvae of fishes and invertebrates, many protozoan and small invertebrates and bacteria. The plant constituents of plankton such as diatoms are called phytoplankton. Animaculcs and immature stages of insects on the other hand constitute Zooplankton. The chemical plant foods needed to grow terrestial

plants are the same that are needed to grow aquatic plants in the ponds, tanks, wells or streams. These water plants, in turn are needed to sustain animal life.

Fertilization of small fish ponds or tanks increases the nutrients available to the lowly life of plankton especially the phytoplankton and bacteria. These in turn provide more food for higher organisms resulting finally in a higher return of fish from a unit area of water. Productivity of water is correlated diretly with the productivity of the land that it drains. A pond or lake situated in a rich agricultural region is likely to produce more and bigger fish per acre than a high mountain lake in a drainage area of poor land. The rich fertilizers and top dressings applied to farm lands find their ways into the streams and lakes enriching them in this manner.

Fertilizer itself is not a food for fish. It however, nourishes the plankton which in turn furnishes food for the fish. The addition of fertilizer increases the growth of the plankton consumed by the fish just as the addition of plant food increases the growth of forage crops consumed by Live stock. In the pond the microscopic organisms are eaten by small-fish while others serve food for water insects which are also relished by the fish. In warm and bright weather the response to fertilizer will be rapid and within less than a week, the small organisms forming plankton will multiply to great numbers, which when scattered throughout the water gives the pond a green or greenish brown colour.

Fertilizers, therefore, play an important part in profitable pisciculture. Its use is the most practical method for growing more and bigger fish weighing as much as 4 or 5 times, as compared with fish the water media of which does not receive the benefit of fertilization. Because water of paddy fields is richer in plant nutrients than the water in ponds, the rate of growth of fish is much more rapid in paddy fields than in the ponds. A better fertilised paddy field will necessrily yield bigger sized fish.

When and how to apply Fertilizers to fish ponds and fish farms

Mineral fertilizer give the best results and at the same time are cleaner too, to apply to the ponds and lakes. These fertilizers are applied only during the growing season at the rate of 100 lbs. per acre of pond as soon as the danger of heavy rains has passed. Fertilizer treatment is repeated at the same rate at intervals of two to four weeks until the pond becomes green or greenish brown in colour; then again when the characteristic colour begins to disappear and the bait at the hook or a piece straw tied at the end can be seen at a depth of about one foot. 4 to 5 treatments each year is necessary to achieve the best results.

In the case of paddy fields, the fertilizers· applied to the crop are also useful for growth of plankton. Generally the composition of the fertilizer mixture for growth, of plankton is the same that is used for the land crop. For paddy fields, most suitable fertilizer mixture is 4-8-2 and this should be applied more liberally to allow for the rapid growth of plankton and thereby to obtain heavier harvest of fish. 4-8-2 means 4% N 8% $P_2 0_5$ and 2% K20.

It should not be apprehended that plankton will compete with paddy crop for appropriation of fertilizers. On the contrary algae which form a part of plankton assimilate free atmospheric nitrogen and like nitrosomonas which fix atmospheric N in the soil, its activity is invigorated by the use of phosphates. Plankton is consumed by fishes and its ultimate fate is, growth of fish in size, and excreta of fish, the latter like dung

and urine of cattle fertilises the bottom soil of the paddy fields for the benefit of paddy crops.

The same fertilizer mixture will be most suitable for ponds and tanks in the Konkan or paddy growing tracts. As regards tanks and ponds in the areas where the soils are of alkaline or neutral in reaction, the fertilizing mixture of the approximate ratio of 1:1:0 or 2:2:1 NPK may be suitable. Mixtures of such formulae among the list prescribed by the Department of Agriculture Bombay State are 8-8-0 or 9-9-5.

In short every village in India has got one or more tanks. With proper care and management and introducing right kind of fry and above all providing the fish with food supply through fertilization, a good and constant supply of fish can be made available for human consumption. For growing double crop of paddy and fish the example of paddy cultivators of Kolaba District may be followed in all paddy tracts where paddy or Jute stands in water.

POPULATION AND FOOD SUPPLY IN ORISSA

By: SURENDRA NATH MISRA

THE Planning Commission has indicated three principle determinants of development. Apart from sociological and psychological factors, which do not come strictly under our study, the rate of economic development depends upon (a) the rate of growth of population (b) the proportion of the current income of the community devoted to capital formation (c) the return by way of output on the investment thus undertaken. What the Commission has drawn on a wider canvas representing India as a whole is also true of a particular State. It is but evident from the observation of the Planning Commission that the rate of population growth is the most important factor governing the rate of growth in other sectors of the national economy. It is primarily in this context that the assessment of food supply in Orissa over a past few decades is conditioned by the rate of growth of population.

The principal factors governing the growth of population are births, deaths and migration. The demographic history of Orissa is closely connected with the tragedy of death and devastation from famine and floods. For our purpose of study, we may take the census of 1921-31. This decade is memorable for the beginning of industrialisation in Orissa. Excepting the coastal districts, this decade had food crops in other parts of the State. Sambalpur and Bolangir had bumper crops for the entire period. When the Census of 1931 took place, Orissa had gained by 13,32,470 bringing the total population to 12,491,056. This meant that during the decade 1921–31, the population in Orissa recorded an increase of 11.9 percent, the highest since 1881.

The decade 1931–41 is an important mile-stone in the history of Orissa, for it was in this decade that Orissa was constituted into a separate Province. The condition of crop in most of the years was satisfactory except in 1933, 37 and 38, when the harvest yielded inadequate return. There was a flood in 1938 which affected the agricultural position to a great extent, and with the out-break of war, the prices of commodities recorded a rise. The economic and material condition of the people did not

show any marked deterioration upto the the year 1940. This period of comparative stability ensured a satisfactory growth of population which increased by 12,76,932 a growth of 10.2 per cent during the decade. The population of Orissa in 1941 stood at 13,767,988.

The war economy produced tremendous impact upon the demographic and economic growth in Orissa. The position of food stock during the last decade was very unsatisfactory. Local shortage was acutely experienced in 1942-43, when the surplus areas had to send the food grains. Till the middle of 1943, the annual carry over of food stock was very high but with the introduction of free trade under a central plan, Orissa had to export a large amount of rice to other States and thus the stock of rice in Orissa was depleted to an extraordinary extent. By the time, the war was coming to an end in 1945, there was a widespread belief that the cessation of hostilities would be followed by economic depression consequent upon the suspension of the unprecedented war expenditure. The unprecedented war time expenditure sought to be utilised in projects of capital investment. The enhanced purchasing power arising out of post war inflation was rather diverted to extraordinary speculations in the stock market than to any productive investment. All these developments had thus great influence upon the growth of population.

The growth of population in Orissa during the decade compares unfavourably not only with the growth in two previous decades but also with the growth noticeable throughout India as a whole. The mean decennial growth of population in Orissa is strikingly different from other States of India and from foreign countries particularly during the last three decades. The mean decennial growth rate is the difference between the general population totals of two suceessive censuses expressed as a percentage of the arithmetical mean of these two tolals and is therefore slightly different from the ordinary rates percentage variation. Between '1941-51' the mean decennial growth rate was as follws in the different states of India.

T. C.	..	+12.5
Mysore	..	+21.2
Bombay	..	+20.8
Assam	..	+17.4
Rajasthan	..	+13.9
Madras	..	+13.4
Hyderabad	..	+13.3
West Bengal	..	+12.7
Utter Pradesh	..	+11.2
Madhya Bharat	..	+10.4
Bihar	..	+ 9.6
Madhya Pradesh	..	+ 7.9
Orissa	..	+ 6.2
Vindya Pradesh	..	+ 6.0
Punjab	..	− 0.5

The Punjab's figure is the lowest, but this figure does not indicate the trend of growth because Punjab was partitioned resulting in waves of migration. Thus Orissa except Vindya pradesh may be taken to have the lowest gain in India by way of decennial growth. So far other countries are concerned Ireland has shown a decrease of 7 percent while France shows only negligible increase. The most rapid increase has been recorded in Argentina 251 percent followed by Cuba 231 percent and Columbia whose growth stands at 213 percent.

Our purpose in analysing the growth of population is to co-relate it with the corresponding rate of increase in the growth of cultivation and production of

food. In short it can be said that the year 1921 divides the first half of thc present century into two periods, firstly from 1901-1921—a period of slow growth and from 1921-1951—a period marked by rapid growth. The growth during the first 20 years comes to only 855,669 or in other words 8.3 percent while the growth in the next 30 years comes to the high figure of 34,87,360 or 31.3 percent. Thus the year 1921 sets in motion a distinct trend in the growth of population which is likely to continue for a few decades.

Another question which is strictly relevant to our discussion is whether Orissa is over populated. The density of population in Orissa is lower than that of many other States. But an arithmetical ratio which density connotes should never form a criterion for judging over population. The conception of over population is closely connected with the food output within the country and the food supply which can be obtained from outside the country, as well as with other resources, necessary to maintain the standard of living.

In order to have a balanced economy, there should be no disparity between the growth of population and the growth of food supply and the extent of cultivation. If the one outstrips the other, the result is a necessary imbalance. It appears that in Orissa, the growth of cultivation during the first two decades of the present century exceeded the growth of population. During the period, the population of Orissa increased by 8.3 percent, but agriculture seems to have gained by a comparetively greater extent of increase. The position was greatly reversed during the next thirty years; while the rate of growth of population was 31.3 percent during this period, the extent of cultivated area decreased to a very considerable extent. During the last decade, some significant additions were made to the cultivated area. But the decline continued to persist in spite of the additions, as the earlier decline was of a very high magnitude. Thus as indicated earlier the first two decades of the present century may be considered as a period of stagnation for the population but was a period of satisfactory growth in cultivation. The position was just the opposite in the later decades.

There has been a continuous fall in the net area sown from 1921 to 1941. Although the net area sown recorded a slight increase in 1951, it is much less than what it was 30 years before. The net area sown stood at 129.7 lakh acres in 1921, which was reduced to 123.7 lakh acres in 1931 and to 118.1 lakh acres in 1941. In 1951 it has risen to 121.2 lakh acres which though higher by 3.1 lakh acres than the area of 1941 is less by 8.5 lakh acres than the area sown in 1921. The over all decline in 30 years from 1921 to '51 is 8.5 lakh acres for Orissa, 1.6 lakh acres for the inland division and 6.9 lakh acres for the coastal division.

Many factors operated to restrict the acreage of cultivated area. Some of the important factors are however the high cost of plough bullocks, adverse seasonal factors and change from agricultural to industrial professions. There has been also a certain amount of deterioration in the land. Thus portions of the once fertile land of the deltaic region of the Mahanadi and Brahimini have become sand logged as a result of frequent floods during the past two decades. Though some new irrigation systems have been introduced, the existing irrigational sources have suffered from reduction of irrigation potential.

The per capita land in Orissa has fallen from 116.2 cents of land in 1921 to 85.7 cents in 1941 and has been further reduced to 82.7 cents in 1951. The rate

of decline is greater in the coastal division than in the inland division. The most important factor that has brought about a decrease of per capita land is the rapid growth of population at a rate higher than that of cultivation. The decrease in the per capita land indicates decline in per capita food, since there is a limit to technological possibilities.

The extent of irrigation may be taken as an index of the food sufficiency. But the most alarming indication is the rapid decline in the extent of per capita irrigated area. The per capita irrigated area has decreased from 14.1 cents in 1921 to 13.3 cents in 1951, a decrease of 0.8 cents per capita during the last thirty years. In this connection, the report of the famine Commission is worth quoting. According to Famine Commission report the average area under irrigation during the quinquennium ending 1921–22 was 6,81,000 acres which was reduced to 6,45,000 acres in the quinquennium ending 1941–42. This means that within a period of twenty years there was a reduction of 36,000 acres in the irrigated area. The land utilization statistics of the Ministry of Food and Agriculture puts the decline in the irrigated area between 1931–41 at 70 thousand acres.

In Orissa, agriculture is over–whelmingly an important occupation. 79.3 percent of the people draw their sustenance from agriculture to-day. The growth of population at a rapid rate and the simultaneous decline in the area under cultivation and the food production have led to diminishing per capita production. Not only has there been a lag in the rate of growth of population and an increase in cultivation, but the imbalance between the two is assuming consistently greater dimension. With increasing development expenditure, the propensity to consume has increased to a great extent, but the food production has not increased correspondingly. We may now take into account the fact that during this period, a considerabe increase in the per capita national income has taken place. All available data regarding consumer expenditure both past and more recent show considerable income elasticities of demand for food. It means that with higher income the consumers have tended to spend a higher proportion of the increased income on food grains.

The Census Superintendent of Orissa has calculated the actual food requirement by Luck's coefficient methods. According to this calculation, the total food requirement of the population of Orissa amounts to 12,228 thousand units of consumption. The per capita consumption of cereals is not known. If the average Indian standard is adopted, the total food requirements of the population will be of the order of 17 lakh tons of clean rice. As against this demand, the production of rice in Orissa at the rate of 650 lbs. of clean rice per acre for 9.5 million acres of land under rice cultivation comes to 27.5 lakh tons. It is usual to deduct 14 percent from the net produce towards wastage, animal consumption and seed requirements. Thus our net production comes to 23.7 lakh tons of rice.

The annual export of rice is nearly one lakh ton. Therefore the quantity of rice left for consumption comes to 23.7 lakh tons. The requirements of the people per adult comes to 19.8 lakh. This still leaves a surplus of 2.9 lakh tons of rice per year. What happens to this large surplus. It cannot be ascribed to the hoarding habit of the people wholly. The only rational explanation of this apparent surplus is that the present calculation is based upon the normal year and allowance has not been made for the frequent occurences of the failure of crops which takes place in Orissa. Thus

if we take the trend of rice production for the last few years, we find that the total production in many years has fallen far short of what has been taken as the normal figure. The annual production of rice estimated at 20.9 lakh tons estimated by the Ministry of Agriculture is merely an average figure and does not explain the actual position in the individual years.

In this context, it is very important to examine the commonly held hypothesis that Orissa is a surplus State. During the last decade the actual figure which is available, approximately 10 lakh tons of rice have been exported. This comes to approximately one lakh ton per year. But this exportable surplus is greatly a paradox. How do we combine our surlus with the utter deficit of food felt by the peasants in large part of the year. The surplus is not real in character. The peasants sometimes sell their crops for meeting their other monetary requirements without keeping sufficient food for the rest of the year. Thus the surplus potential is being consistently built up at the cost of a progressive deterioration in the nutritional standard of the people.

While the position of rice is precarious, considering the rapid rate of increase in population, the position of other food crops is still worse. The quantity of wheat imported in each of the years 1949 and 50 was 8000 tons and in 1951, it was higher namely 9000 tons. Since 1951, we are importing still greater amount of wheat and other food crops. There is no reliable statistical data regarding the deficiency in other items of food, but what is obvious is that the gap between population and requirements is very large since many years and is likely to rise with the increasing tempo of our population growth.

The problem of population has to be considered in close relation to the means of sustenance mainly supply of food. But it is not merely an increase in the quantum of food production which is of much importance. The objective should be also to have better nutritional standard. If the diet is largely composed of cereals, it does not contain enough nutrient. The deficiency in diet in Orissa is not confined in terms of calories but also may be defined in terms of proteins and fats. Thus it is evident that an imbalance exists between the population and food supply, though it is difficult to give it an arithmetical precision.

Once we are agreed that there is deficiency of food crops in relation to the growth of population, the next question to be taken up is what steps can be taken to overcome it. The Famine Commission of 1880 emphasised upon the need of bringing waste land under cultivation. Before bringing waste land under cultivation, the productivity of the existing land should be increased through better irrigation, manuring, use of improved seeds and implements. Some advance in that direction has been done under the First and Second Five-Year Plans in Orissa.

While considering the aspect of land utilisation, economic possibilities are as important as technological possibilities. Hence, it would be economically more profitable to increase the productivity through greater intensive cultivation. But there is nevertheless some scope for bringing fallow lands under cultivation. The fallow lands in Orissa have been estimated at 54.5 lakh acres in extent, constituting 14.16 percent of the total area of the State. The net area sown is 31 per cent of the total area of the State. Cultivation may be extended to these fallow lands if the economic and technological possibilities do not conflict.

Another tendency which hampers increase of food production is the preference, which the peasants sometimes show towards cash crops. A radical swing to the production of cash crops motivated by commercial consideration is likely to accentuate still further the complexity of food problem. In this connection, the suggestion of the Food Grains Enquiry Committee for a food grain stabilisation organisation is welcome. If the food prices are stabilised at an equitable level so as to reconcile the interest of the consumer and the producer, the incentive to go on with cash production would lose much of its force. The Government of Orissa has taken up State Trading in food grains, which is a first step in the socialisation of food grains trade as suggested by the Food Grains Enquiry Committee Report. According to Sir Boyd Orr, about 30 percent do not get enough to eat, while a much larger section of the population have to be satisfied almost invariably with ill-balanced diet in India. In the context of Orissa, Sir Boyd Orr's calculation is obviously an under estimation.

(The author has taken the satistical materials used in this article from the Census Report of Orissa, 1951).

CROP PLANNING FOR THE DAY

By : N. M. CHATURVEDI

POPULATION is increasing with a great speed. It is very difficult to feed the people without producing more. Production of grain per acre and in total, both should increase. There is much scope in producing more per acre in all the grains produced in the State.

This is the age of planning. Proper planning of crops in relation to soils should be done to achieve more yields. Growers have long since discovered that crop will not grow unless proper cultivation is not done.

In the race of production crops are grown without planning. Sugarcane is grown after early paddy. Paddy and sugarcane both are of the same family. The requirement of nutrials for both the crops are similar. It will not be proper to take sugarcane after Paddy from the point of the nutrient potential of the soil.

Law of minimum

It is not always that the yield is proportionate to the application of fertilizer. It has been established that the crop is depended on that necessary nutrient which is present in the least amount. In the rotation of paddy-sugarcane amonium sulphate is applied in sufficient quantity for the nitrogen requirement. The nutrient which may be required by the plant and it may be in the least quantity in the soil. That amount of particular nutrient is not ascertained easily. This is one of the reasons of low yield in such type of rotation. The manurial and fertilizer requirements of a crop are dependent not only on the demands of the particular crop. The general practice which is being followed in the pace of production is that the requirement of nutrients are applied on the basis of the crop requirements.

Interaction of nutrients

There is an interaction of the nutrients also. This interaction has a say on the plant yield. It is clear that the nitrogenous fertilizer is re-inforced by the phosphatic fertilizer specially in heavy

soils. In light soils it has been seen that potasic fertilizer is quite effective in inforcing the availability of nitrogen to the crop.

Effect of weather

Weather effects the soil. Cultivation and the weather both correct the soil conditions to some extent if they are given to operate fully. It is better to have Fallow-wheat, than to have Paddy wheat. If the requirement of wheat is fulfilled in both the cases even then the yield in the first case will be more than the second one. One should be particular about his land. The field will loose its nutrient potentiality with disturbed planning of crops. Intensive cultivation is recommended considering the method of crop planning in a particular rotation.

Effect of Green Manure

It has been seen that sugarcane after early paddy gives very good results if it is green manured after Paddy. Green manuring may be made from any crop, it may be Berseem, Peas or Gram. Berseem may be sown in the standing field of Paddy and after the harvest of paddy Berseem remains in the field. This Berssem may be ploughed in, in due course of time.

Effects of trace elements

Crops require trace elements for their proper growth and yield, major nutrients required are supplied first. In the soil of the State the trace elements are not always the limiting factor for the more yeild or growth of the crop. The status of the trace elements are maintained with green manures, or keeping the field fallow. Where cultivation and weather has a full play paddy-peas, or Green Manure, sugarcane and wheat are the good rotations. In crop planning one should see the requirement of (a) Soil (b) Plant and (c) his own.

Effects of resources available

The resources available for the nutrition of the crop should also be considered. Maize, Potato, Tobacco is a very good rotation but a heavy manuring is required for the field. peas, fallow wheat is also a rotation but it does not require much more manure as the requirement may be met by the residual effect of peas and keeping the field fallow.

When planning the crops one should see the followings:—

(a) Previous crop of the field

(b) Crop to be taken

(c) Resources available for the nutrition of the soil

(d) Residual effect if any

(e) Nutritional potential of the soil from the previous records

Effect of cultivation

Cultivation is also a great factor for the better yield. It helps in two ways:

(1) It creats a better tilth for the crop

(2) Maintains the field free of weeds and levels it for the better growth

While planning, judicious care should be taken to provide time for the cultivation of the soil. The best measure for the greater yield is that one should not change the way the crops are planned in a locality, after an experience of several years.

No doubt with the development of resources the planning should also be changed. The yield, our ultimate goal depends on so many variable factors. The factors which are responsible for more yield should also be taken into account while planning. For an average condition of soil, irrigation and other resources, where wheat, sugarcane, paddy crop planning is made all crops can grow. The crop planning may be suggested like (1) Paddy-Pea (2) G.M., sugarcane, wheat (3) Paddy-pea fallow Potato.

IMPROVEMNET OF SUGARCANE IN INDIA

By : J. P. AGARWAL[1] & K. SINGH[2]

SUGARCANE holds an important place in the agricultural economy of India. The total acreage and production of raw-sugar during 1955-56 being 3.932 million acres and 5.546 million tons respectively. Sugar industry is the second largest industry of the country. It is one of the chief cash crops for a farmer and about 20 million people are engaged in its cultivation every year.

Classification :-Sugarcane species come under the genus *Saccharum* of the family Gramineae. Jesweit has classified the sugarcane species as follows :

(1) *Saccharum officinarum* (thick or noble canes).

(2) *Saccharum barberi*
(3) *Saccharum sinense* } (Thin canes)

(4) *Saccharum spontaneum* (Wild relative).

To these may be added *Saccharum robustum* a species which has been recently discovered in New Guinea.

Centres of Origin :—*Saccharum barberi* and *S. sinense* are considered to be originated in India. These species have descended from the wild cane *S. spontaneum* which is found growing wild in India and other adjoining countries. *S. officinarum* is the native of New Guinea and is believed to be evolved from *S. robustum.*

Cytology :—The whole genus is a very highly polyploid complex. Thin canes *(S. barberi and S. sinense)* contain 2n = 82 and 124, while in case of *S. officinarum* 2n = 80. *S. spontaneum* presents the biggest polyploid series i. e. 2n = 54, 56, 60, 64, 72, 80, 108, 112 and 120.

Improvement work :—

Purpose of Improvement :—India once used to be a chief exporter of raw-sugar to Great Britain. But the trade could not flourish and the arch of Indian Sugar industry collapsed down chiefly due to (1) The heavy import duty levied on Indian sugar by Britain and (2) By the discovery of manufacture of sugar from Sugarbeets in Europe and (3) The strongest death blow to the industry was received when Java dumped the Indian market with its sugar, which in India was sold at a much lower price than the indigenous sugar. All these conditions led to the realization of revival of the cane industries in India.

Problems :—(1) More than 75% of the then total cane acreage was under thin canes which were very poor in tonnage, yielding on an average about 280-300 mds of cane per acre. Their juice percentage was also very low. Thus, a higher yielding variety with higher juice percentage was desired.

(2) The most important sugarcane belt lies in the subtropical India (comprising U.P., Bihar, Punjab, Bengal etc.). Thus a thick and superior variety which can grow under the rigorous edaphic and climatic conditions of Northern India was desired.

(8) In Northern India, there is found a great diversity of soil and climatic conditions, in different regions. Thus, a superior variety of wider adaptability i. e. resistant to diseases and pests, resistant to water logging, drought and other adverse conditions was desired. (4) The life cycle of cane in tropical India varies from 18-20 months. But this was quite undesirable under the north Indian conditions. Thus, a variety

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maturing within 10-12 months was desired.

(5) The varieties of cane had not been classified according to some standard pattern. Varieties were named differently in different regions, and hence there was a great confusion in the names of varieties.

The improvement of sugarcane has thus been brought about mainly with reference to the fore-mentioned burning problems of the day.

Methods of Improvement:—The improvement of crops may by brought obout by the following methods.

1. Introduction and Acclimatisation
2. Selection
3. Hybridisation

1. Introduction and Acclimatisation :— The first step was to introduce the exotic varieties and test out whether these can be grown under different soil and climatic conditions of India.

Some varieties like P. O. J. 213, 2714, 2878, (wonder cane of Java), Mauritious 55, B 208, 376, 7412, 6308 and Fiji B proved great promising and went into cultivation in tropical India. But out of these only P. O. J. 213 under the name S 48 could be acclimatized under the rigorous climatic conditions of N. India.

2. Selection :—This method is practicable only, in case all the desired characteristics are present in one plant so no selection work in sugarcane was carried out.

3. Hybridization :—The hybridization work was started under the charge of Dr. C. A. Barber in 1912 after the establishment of sugarcane breeding station at Coimbatore. Dr. Barber first of all made a survey of India and classified all the varities of cultivated canes as well as the wild canes. He recognised the following groups :—

(a) **Thick canes :—**These were mostly grown in southern India. The canes are thick with higher yields and higher percentage of juice but susceptible to diseases and pests, and cannot be grown under subtropics.

(b) **Thin canes :—**These were found growing in N. India and were subdivided into the following groups :

(i) Saretha (ii) Sunnabile (iii) Pansahi (iv) Mungo, and (v) Nargori.

(c) **Wild canes :—**(i) *Saccharum spontaneum* (ii) *Sclero stachya* (iii) *Erianthus sp.* (iv) Narenga sp. and (v) Miscanthus sp.

Of these *S. spontaneum* was found to exhibit the widest adaptability under the divergent soil and climatic conditions. The plants were found to grow almost all over India. The chief characteristics of the plants found are enumerated below :

(i) Resistance to drought (ii) Resisttance to acidic or saline conditions (iii) Water logging resistant (iv) Distributed in areas receiving annual rainfall from 20″ to 200″ (v) It grows on wide variety of soils i. e. sandy loam to clayey soils (vi) It grows at altitudes varying from 4000 to 8000 ft. (vii) Resistant to frosts as well as extremely hot conditions (Plants can grow within the temperature range of 30°F–124°F) (viii) Erect habit and tallness (height 3–4 to 12–15 feet) (ix) Profuse tillering (x) Vigorous growth (xi) Juice contents 0.5–17.5% (xii) Resistant to most of the sugarcane diseases (xiii) Propagates sexually.

Production of Seedlings:—Sugarcane is propagated vegetatively but for hybridization work germination of seeds was necessary. In the beginning seeds were sown in green houses, but T. S. Venket-Raman was able to obtain seedlings under ordinary conditions at Coimbatore.

Choice of the Parent :—No inter-varietal hybridization was desired. First of all crosses between thick canes were

made in order to combine the thickness of thick and the resistant qualities of thin canes. The hybrids were more hardy than thick canes but did not possess enough hardiness for growing under North Indian conditions. They were also susceptible to certain diseases. Then, *S. spontanenm* was selected as one of the parents and crosses were affected.

The velli cane of Coimbatore (*S. officinarum* was crossed with a local variety of *S. spontaneum* in 1912. The details are represented diagrammatically below :

Velli———X———*S. spontaneum*
|
60 Seedlings .... (F1)

Thus 60 seedlings were raised in F1 generation. Out of these only one was found promising. This was multiplied and named as Co 205. All the hybrids were quite resistant to diseases and other conditions, but their juices were poor in sugar i. e. there was dominance of wild characters. These defects were corrected by repeatedly back crossing the hybrids with noble canes, the process being known as *nobilisation.*

Inter Generic Hybridisation :—

(i) *Sugarcane-Sorghum hybrids* :—

In order to breed early varieties (maturing within 6 months) sugarcane was crossed with cereals like *Sorghum durra* (Jowar), *Pennisetum typhoideum* (Bajra) and weeds like *Cyperus rotundus* (Motha) etc. but the success appeared only in case of Jowar. The cross is represented below :—

P. O. J. 2725—X—*S. durra*
|
Hybrids...........F1

The hybrids showed a great variation and out of them only 7 which combined short life cycle, satisfactory growth and vigour, and high sugar content of juice, were selected and numbered as Co 350, 351, 353, 354, 355, 356 and 357. The sucrose percentage of juice varied from 15 to 18.5%. They took 200-220 days for reaching maturity. These were found to be grown successfully even in the absence of irrigation. Thus these crosses combined high sucrose percentage with early maturity as well as drought resistance. But the chief drawback with these varieties was their poor yield as the plants were stunted in growth like *the Sorgunm* parent. Two of these (Co 355 and 356) varieties did fairly well in U. P. Bihar and Madras. Co 356 is still popular in tarai area of U. P.

(ii) *Sugarcane Bamboo Hybrids* :— Sugarcane was crossed with Bamboo to increase its vigour of growth in 1936. P. O. J. 213 and 2725 were crossed with *Bambusa arundinacea.* The hybrids possessed the growth vigour characters but lacked in high juice purity. These hybrids were discarded and no further step was undertaken.

Results achieved :— India regarding the improvement of cane has turned the corner. The every first release of varieties like Co 205, 210, 213, 214, 223 etc. replaced the indigenous varieties in the subtropical India within the first decade of their release. The Coimbatore varieties not only became popular in India but their fame spread far and wide in the world and were imported by several other countries.

At present about 90% of the cane acreage is saturated by the improved varieties. The average yield of cane of different States of the country obtained during the recent years is shown below :

S. N.	Name of State	Average yield of cane / acre in tons
1.	U. P.	12.9
2.	Bihar	12.0
3.	Bombay	31.0
4.	Madras	25.0
5.	Punjab	12.0

Compare these yields with the over-all average yields of cane in other advanced countries.

Name of countries	Averrge yield in Tons / acre
Hawaii	62
Java	56
Peru	41
Egypt	30
U. S. A.	27
Australia	21

The yields have reached 100 tons per acre in Mysore, 122 tons in Bombay, 90 tons in Coimbatore and 76 tons in U. P. in the crops raised for prize competitions. These are raised on comparatively small areas and under exceptionally favourable conditions but demonstrate the possibilities and also that yeild potentialities of the improved varieties are fairly high.

Although much progress has been achieved in the improvement of cane, yet this is not enough. We have to raise our per capita consumption of sugar equal to that of foreign countries and further have to compete in the world sugar market.

Since variety is the pivot work around which revolve the culture, manurial and irrigational schedules still more improvements in cane varieties are necessary. The most important goal still to be reached is the evolution of varieties giving more sugar per acre besides being more resistant to diseases and pests and to the adverse weather conditions.

Harvesting Sugarcane Crop

FORESTRY—THE HAND-MAID OF CO-OPERATIVE FARMING

By: Dr. V. D. NAGAR

FORESTS are regarded as the "foster-mothers" of agriculture. As a productive enterprise, a protective agency and as the home and refuge of our wild life, their importance to India's economy is vital. But the States have not paid adequate attention towards the development of forests. In the words of Mr. C.R. Ranganathan, former Inspector General of Forests, forestry is like "religion which gains adherence and attention in conditions of distress and danger".

Drought and flood conditions have affected food production in many parts of the country. Although these are natural calamities, "these could have been averted to some extent," says Mr. V. V. Giri. Governor of U. P. "by preventing indiscriminate felling of trees and by undertaking reforestation schemes". The mal-utilsation and indiscriminate forest demolition at an alarming pace by the proprietory interests and contractors or highest bidders, *inadequate* protection from fire, plant diseases, over grazing of the cattle, and encroachment on forest areas have been going on in the absence of well-conceived system of working plans, adequate research with regard to utilization of forest produce and trained personnel for converting and developing the forest wealth.

To add to this unsatisfactory state of affairs, the plan funds for forests have not been utilized. In Andhra, Bombay, Kashmir, Madhya Pradesh and U. P. particularly a large part of the provision remains unspent. The *overall* expenditure on forests for the whole country has also been below expectations. The expenditure incurred or proposed to be spent in the first four years in 14 States was Rs. 1,210.79 lakhs, as against the plan provision of Rs. 1,915.63 lakhs.

In the Union territories the expenditure was Rs. 74.60 lakhs, as against the total provision of Rs. 176.27 lakhs. The delay in spending the funds and the institutional weaknesses resulting in unplanned and slow use of funds will have repercussions on the size of the third plan. The Planning Commission suggested an immediate survey of waste lands as basis for evolving a system of balanced and complementary land use and recommended two fold measures, namely: (1) for each State, the proportion of the area that ought to be under forests should be clearly indicated by the Control Board of Forestry, keeping in view the principle of proper land use of the nature of the terrain and the national needs.

Deforestation was allowed for the extension of permanent agriculture only where the area under forests was above this proportion or where some equivalent area could be afforested, and (2) the area under forests should be steadily extended over waste lands considered suitable for the purpose. The Commission also recommended a properly centralized co-ordination of the working plans of the States. But very little progress has been made in these directions by the States and the surveys wherever carried have not been further followed and utilized.

Increase in food production through co-operative farming and intensive and extensive use of our resources have been given priority in our planning. The overall employment potential will be

reduced when machanised farming is done on a larger scale on co-operative farms. Prof. M. L. Dantwala has apprehended, "If along with the pooling of land, all the existing cultivators and a few more of landless labourers are accomodated, there will be no improvement and there may be even some deterioration in the new man land ratio and this will have a depressing effect on the return which workers on the co-operative farm will receive."

Thus, co-operatives by pooling of resources will reduce the number of farm labourers and increase the existing disguised labour of individual farmers. The forests can welcome and provide whole time and gainful jobs to a large number of surplus labour-force. The proposal of the Union Agriculture Ministry for the third plan has placed the employment potential of the forests at 343.5 million man-days. This employment potential can be increased if adequate attention is given to the hitherto neglected forest industries.

There is a great scope for development of forest industries. In the high hill forests of U. P., there are sufficient firs to support paper mills. In Madhya Pradesh the saw mills, match box industry, splint manufacture paper, ruse and other oil industries, shellac and vegetable dyes, lac, beewax and honey, and tanning industries can be based on forests.

In other States, industries like bamboo, palm gur, wood-work, turney and lacquer work, toy-making, bones, reeds, etc. can absorb gainfully the unemployed and under-employed labour force. Recent experiments have shown that 'Mahuwa' seeds can be used for extraction of non-edible oil and camphor, till now imported from south east Asian countries can be prepared form 'tulsi' tree. But adequate funds have not been provided for the development of these industries. Based on the priorities laid down by the Planning Commission the State plans have provided Rs. 49.5 lakhs for forest industries, Rs. 393 lakhs for education and training and Rs. 10.0 lakhs for research. That these meagre allotments have not been utilized, points out the need for re-orientation of our forest policy.

Suggestions

If Forestry is to be successful and made hand-maid of co-operative farming, it has to be necessarily planned and systematically developed. Again, if Planning is to be effective it must have some definite objectives of self-sufficiency in producton of timber and other materials, assured supply of forest products for public consumption and agriculturists, protection of forests from soil erosion, preservation of wild life, realisation of maximum income by way of regular revenues from forests etc., provision of employment to the farmers and labourers in the neighbourhood of forests should also be aimed at. To achieve this, the following measures should be adopted.

1. The chief difficulty that prevents the development of forests and exploitation of the resources is lack of suitable roads. The second plan provided Rs. 104 lakhs for development of communications in forests which cover from the out-turn point of view 229, 949 sq. miles under merchantable and 50,947 sq. miles inaccessible forests. The third plan should provide top-priority to the construction of roads in forest areas, which incidentally will also absorb the surplus labour from agriculture. The States will have to provide more funds so that the forests may provide jobs to labourers on the whole time basis.

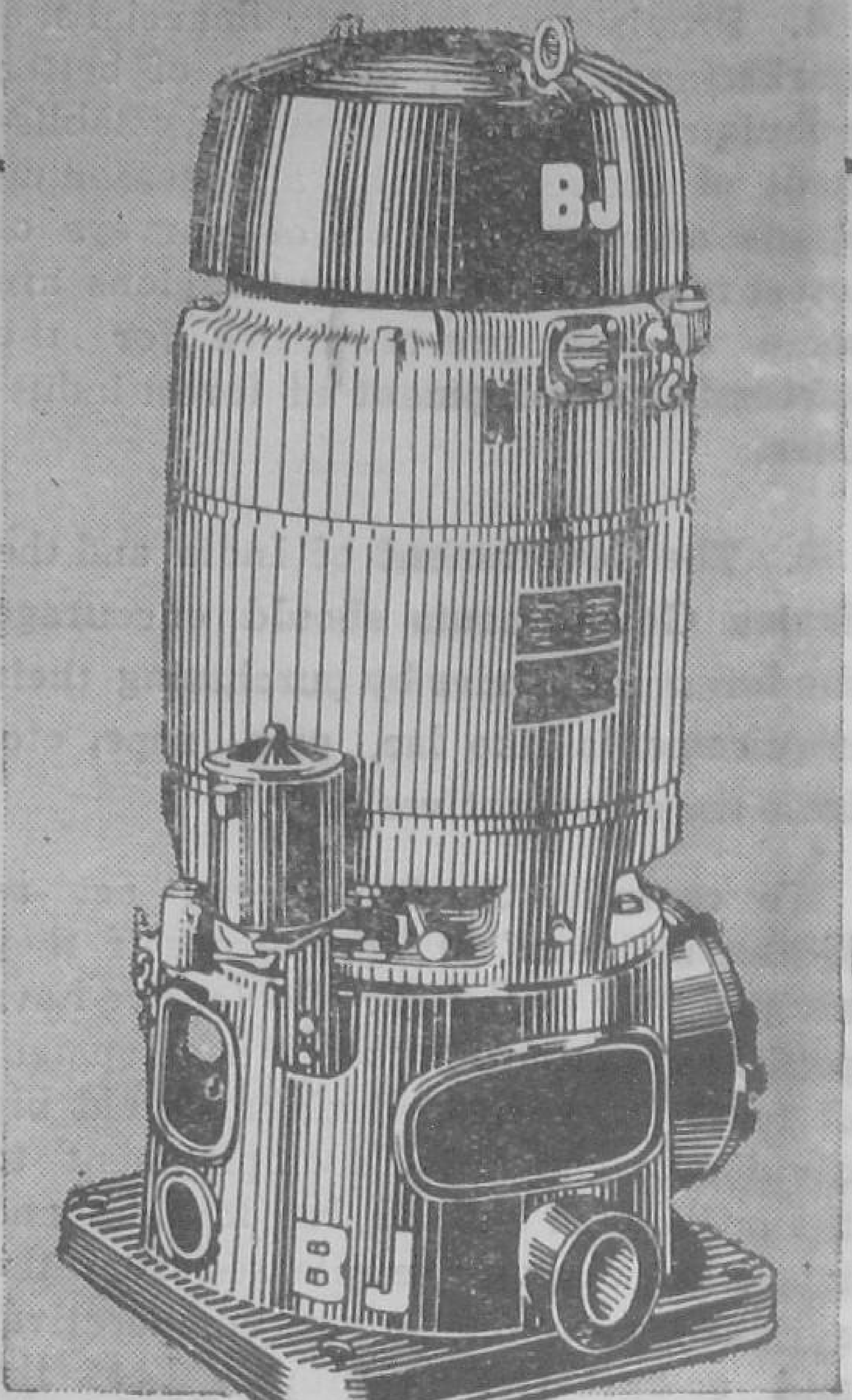
2. The utilization and exploitation of forests and the development of forest industries is at present done through the agency of contractors who do not care for the demands of future generation. The systems of contract and highest bidding must be stopped. The abolition of intermediaries from land will not be complete unless intermediaries from the forests also are ousted. The labour-co-operatives in the forests should be formed for exploitation of forests and development of forest industries.

3. In order to ensure the sustained yield from the forests, the felling of trees must be made partial and the young 'crops' be protected from external dangers. Natural reproduction of the valuable species exploited does not keep pace with the removals leading to impoverishment of the crop. This will involve careful regulation of the yield on the basis of enmeration so that the growing stock representing the productive capital may not be encroched upon. Then, the deliberate fires in the neighbourhood of villages should also be controlled effectively.

4. Provision of training, financial and marketing facilities, adoption of better techniques of timber extraction, establisment of timber treating and seasoning plants and organisation of surveys of forest resources in different regions are some of the pre-requisites for the successful development of forest industries.

6. The Government of India and the States Governments should encourage the forest industries by purchasing their requirements like lac, gum, rope, etc. from the co-operatives only.

To conlude, the forests can act as "foster-mothers" of agriculture if they are properly exploited. So for we have paid scant attention to the development of forest-industries which can yield big dividends and provide employment to the millions of our surplus farmers and labourers who will be released from the agriculture carried through co-operatives and co-operative farming. Let the forests provide what the land finds difficult to do.



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